VERIZON WIRELESS

AIRCARD® 595 PC CARD USER MANUAL

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Welcome

Congratulations on purchasing the Verizon Wireless BroadbandAccess/NationalAccess AirCard® 595 PC Card with VZAccess℠ Manager. This dual-band card operates over the CDMA EV-DO networks in the 800/1900 bands. This wireless PC Card enables you to connect at high speed to the Internet, your corporate Intranet, and your email while you're away from the office.

This document provides hardware-related information about your AirCard 595 PC Card.

For information on installing the AirCard 595 PC Card and using the VZAccess Manager software, please see the VZAccess User Manual (available as a PDF file on the installation CD).

Wireless communications

Important Notice

Due to the transmission and reception properties of wireless communications, data can occasionally be lost or delayed. This can be due to the variation in radio signal strength that results from changes in the characteristics of the radio transmission path. Although data loss is rare, the environment where you operate the modem may adversely affect communications.

Variations in radio signal strength are referred to as **fading**. Fading is caused by several different factors, including signal reflection, the ionosphere, and interference from other radio channels.

Verizon Wireless or its partners will not be held responsible for damages of any kind resulting from the delays or errors in data transmitted or received with the AirCard 595 PC Card, or failure of the AirCard 595 PC Card to transmit or receive such data.

Safety hazards

Do not operate the AirCard 595 PC Card in an environment that may be susceptible to radio interference resulting in danger, specifically;

- Areas where prohibited by the law
  - Follow any special rules and regulations and obey all signs and notices. Always turn off the host device and remove the modem from the card slot when instructed to do so, or when you suspect that it may cause interference or danger.
- Where explosive atmospheres may be present
  - Do not operate your modem in any area where a potentially explosive atmosphere may exist. Sparks in such areas could cause an explosion or fire resulting in bodily injury or even death. Be aware and comply with all signs and instructions.
  - Users are advised not to operate the modem while at a refueling point or service station. Users are reminded to observe restrictions on the use of radio equipment in fuel depots (fuel storage and distribution areas), chemical plants, or where blasting operations are in progress.

- Areas with a potentially explosive atmosphere are often, but not always, clearly marked. Potential locations can include gas stations, below deck on boats, chemical transfer or storage facilities, vehicles using liquefied petroleum gas (such as propane or butane), areas where the air contains chemicals or particles, such as grain, dust or metal powders, and any other area where you would normally be advised to turn off your vehicle engine.

- Near medical and life support equipment
  - Do not operate your modem in any area where medical equipment, life support equipment, or near any equipment that may be susceptible to any form of radio interference. In such areas, the host communications device must be turned off. The modem may transmit signals that could interfere with this equipment.
- On an aircraft, either on the ground or airborne
  - In addition to FAA requirements, many airline regulations state that you must suspend wireless operations before boarding an airplane. Please ensure that the host device is turned off and your modem is removed from the card slot prior to boarding aircraft in order to comply with these regulations. The modem can transmit signals that could interfere with various onboard systems and controls.
- While operating a vehicle
  - The driver or operator of any vehicle should not operate a wireless data device while in control of a vehicle. Doing so will detract from the driver or operator's control and operation of that vehicle. In some countries, operating such communications devices while in control of a vehicle is an offence.

Limitation of liability

The information contained in this document is subject to change without notice and should not be construed as a commitment by Verizon Wireless, Inc.

Copyright

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Patents and licenses

Portions of this product may be covered by some or all of the following US patents:

5,515,013 5,629,960 5,845,216 5,847,553 5,878,234 5,890,057 5,929,815 6,169,884 6,191,741
6,199,168 6,339,405 6,359,591 6,400,336 6,516,204 6,561,851 6,643,501 6,653,979 6,697,030
6,785,830 6,845,249 6,847,830 6,876,697 6,879,585 6,886,049 6,968,171 6,985,757 7,023,878
7,053,843 7,106,569 D442,170 D459,303

and other patents pending.

This product includes technology licensed from: QUALCOMM® 3G CDMA

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4,901,307 5,490,165 5,056,109 5,504,773 5,101,501 5,506,865 5,109,390 5,511,073 5,228,054
5,535,239 5,267,261 5,544,196 5,267,262 5,568,483 5,337,338 5,600,754 5,414,796 5,657,420
5,416,797 5,659,569 5,710,784 5,778,338

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AirCard 595 PC Card System Requirements

Microsoft® Windows® XP, Vista, or 2000

Card slot: one Type II PCMCIA (PC Card) slot

Disk drive: CD ROM

For the system requirements to run the VZAccess Manager software, please see the VZAccess User Manual.

Your AirCard 595 PC Card

Your AirCard 595 PC Card fits into the PC Card slot of most Windows-based laptop computers. The AirCard 595 PC Card uses the VZAccess Manager software and the Verizon Wireless network to connect to the Internet and is capable of transferring data at speeds up to 2.0 Mbps*.

**Speeds average 400-700 kbps with bursts capable of 2 Mbps based on our network tests with 5MB FTP data files, without compression. Typical upload speeds of 60-80 kbps. Actual speeds and coverage may vary.*

- **PC Card**: this is the device that, when plugged into a Personal Computer, provides wireless data solutions
- **Computer Interface Connector**: connects to your Personal Computer via the computer's PC Card slot
- **Service/Data LED**: visual indicator that shows you service and data modes. The PC Card has two LED light bars near the antenna end of the card. Both LED light bars operate as described in the table on the following page.

LED behavior	Indicates
Off	The card has no power. The card may not be completely inserted into the computer, or the computer may be in suspend mode (which powers down the card), or you have powered off the card.
Red, blinking slowly	The card is powering up, or no service is available.
Solid blue	The card has power, has found a signal, and is ready to connect.
Blue, blinking slowly	The card is sending or receiving data—a **NationalAccess** data session is in progress.
Blue, blinking rapidly	The card is sending or receiving data—a **BroadbandAccess** data session is in progress.
Solid red	An error has occurred, or no signal was found. Remove the card and reinsert it.

Care of Your AirCard 595 PC Card

Verizon Wireless recommends the following guidelines in handling your card:

- Do not apply adhesive labels to the card, as they may cause the card to become jammed inside the PC Card slot.
- The card should fit easily into your PC slot. Forcing the card into a slot may damage connector pins.
- Protect the card from liquids, dust, and excessive heat.
- When not installed in your computer, store the card in a safe place.
- When storing or transporting your computer, remove the card.
- When removing your card, always grip it by the sides of the card rather than the top. Never insert or remove the card while holding the antenna, as this action may damage the card.
- Do not use the card with a handheld computer; it is designed only for notebook computers running Windows XP, 2000, or Vista.

Package contents

The Verizon Wireless AirCard 595 PC Card package includes:

- AirCard 595 PC Card
- Carrying case
- VZAccess Manager CD ROM (includes the VZAccess Manager software, VZAccess User Manual, and AirCard 595 PC Card User Manual [this document] with warranty information)
- Quick Reference Guide

IMPORTANT: Do not insert the AirCard 595 PC Card into the PC Card slot until you have installed VZAccess Manager and have activated a **BroadbandAccess**/**NationalAccess** service for your AirCard 595 PC Card. For instructions on installing the software, see the VZAccess User Manual.

Technical Support

For additional information and technical support, visit Verizon's Data Technical Support page at: http://www.verizonwireless.com/b2c/support/data.jsp.

Troubleshooting

AirCard 595 PC Card

The following tips may help solve problems encountered while using the AirCard 595 PC Card and the VZAccess Manager software:

- Make sure you are using the appropriate card in the correct geographic region: a BroadbandAccess/NationalAccess card in the US.
- Ensure that the wireless network's coverage extends to your current location.
- Confirm that you have an up-to-date version of VZAccess Manager.

For more troubleshooting information, see the VZAccess User Manual and online Help.

Product Specification

Table 1 General specifications

Name	Verizon Wireless AirCard 595 PC Card	
Model	AirCard 595 PC Card	
Approvals	FCC, IC (North America)	
Dimensions	Length: 130.5mm Width: 58mm Height 12.7mm (height of PC Card portion: 5mm)	
Wireless network – dual mode	CDMA 1X/EV-DO	
PC Card standard	PC Card Type II	

Table 2 Radio frequency and electrical specifications

Technology	CDMA
Band designation	1X/EV-DO: 800/1900 MHz
Current	Maximum: 1 A Typical data call current (talk mode): 370 mA (1X) 420 mA (1xEV-DO) Standby: 120 mA (1X/1xEV-DO hybrid mode)
Transmitter power	200 mW (+23 dBm)
Transmit band	PCS: 1805 to 1870 MHz Cellular: 824 to 849 MHz
Receive band	PCS: 1715 to 1780 MHz Cellular: 868 to 894 MHz
Channel spacing	1.25 MHz
Frequency stability	±150 Hz

Table 3 Environmental specifications

Operating temperature	-30 to +60°C (ambient, outside PCMCIA enclosure)
Storage temperature	-40 to +85°C
Humidity	95%, non-condensing
Vibration	15 g peak 10 to 2000 Hz (non-operating)
Drop	30” (76.2 cm) onto vinyl covered concrete

Regulatory notices

The design of the AirCard 595 complies with U.S. Federal Communications Commission (FCC) guidelines respecting safety levels of radio frequency (RF) exposure for portable devices, which in turn are consistent with the following safety standards previously set by U.S. and international standards bodies:

- ANSI / IEEE C95.1-1999, *IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3kHz to 300 GHz*
- National Council on Radiation Protection and Measurements (NCRP) Report 86, 1986, *Biological Effects and Exposure Criteria for Radio Frequency Electromagnetic Fields*
- Health Canada, Safety Code 6, 1999, *Limits of Human Exposure to Radio frequency Electromagnetic Fields in the Frequency Range from 3 kHz to 300 GHz*
- International Commission on Non-Ionising Radiation Protection (ICNIRP) 1998, *Guidelines for limiting exposure to time-varying electric, magnetic, and electromagnetic fields (up to 300 GHz)*

FCC ID: N7NAC595

IC (Industry Canada) ID: 2417C-AC595

CAUTION: The AirCard 595 has been tested for compliance with FCC / IC RF exposure limits in the laptop computer(s) configurations with the side loading PC Card slot and can be used in laptop computers with substantially similar physical dimensions, construction, and electrical and RF characteristics. This PC card must not be co-located or operated in conjunction with any other antenna or transmitter. Use of this device in any other configuration may exceed the FCC RF Exposure compliance limit. **Note:** If this PC Card is intended for use in any other portable device, you are responsible for separate approval to satisfy the SAR requirements of Part 2.1093 of FCC rules.

Where appropriate, the use of the equipment is subject to the following conditions.

Federal Communications Commission Notice (FCC -- United States)

Electronic devices, including computers and wireless modems, generate RF energy incidental to their intended function and are therefore subject to FCC rules and regulations.

This equipment has been tested and found to comply with the limits for a Class B computing device peripheral, pursuant to Part 15, 22, and 24 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.

This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna
- Increase the separation between the equipment and the receiver
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected
- Consult the dealer or an experienced radio/television technician for help

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

1. This device may not cause harmful interference, and

2. This device must accept any interference received, including interference that may cause undesired operation.

FCC guidelines stipulate that the antenna should be more than 1.7 cm from the user.

The highest reported SAR values of the AirCard 595 by Sierra Wireless are:

1. Separation distance of at least 1.7 cm needs to be maintained to user's lap with AirCard 595 inserted into the bottom PC Card slot of the laptop computer (1.345 mW/g).

WARNING: DO NOT ATTEMPT TO SERVICE THE WIRELESS COMMUNICATION DEVICE YOURSELF. SUCH ACTION MAY VOID THE WARRANTY. THE AIRCARD 595 PC CARD MODEM OEM IS FACTORY TUNED. NO CUSTOMER CALIBRATION OR TUNING IS REQUIRED. CONTACT VERIZON WIRELESS TECHNICAL SUPPORT FOR INFORMATION ABOUT SERVICING YOUR WIRELESS COMMUNICATION DEVICE.

CAUTION: Any changes or modifications not expressly approved by Sierra Wireless could void the user's authority to operate the equipment.

Information pertaining to OEM customers

The AirCard 595 PC Card has been granted modular approval for mobile applications. Integrators may use the AirCard 595 card in their final products without additional FCC / IC certification if they meet the following conditions. Otherwise, additional FCC / IC approvals must be obtained.

1. At least 20 cm separation distance between the antenna and the user's body must be maintained at all times.

2. To comply with FCC / IC regulations limiting both maximum RF output power and human exposure to RF radiation, the maximum antenna gain must not exceed 5.65 dBi in the Cellular band and 4.35 dBi in the PCS band.

3. The AirCard 595 card and its antenna must not be colocated with any other transmitter or antenna within a host device.

4. A label must be affixed to the outside of the end product into which the AirCard 595 is embedded, with a statement similar to the following:
   This device contains TX FCC ID: N7NAC595.
   This equipment contains equipment certified under IC: 2417C-AC595.

5. A user manual with the end product must clearly indicate the operating requirements and conditions that must be observed to ensure compliance with current FCC / IC RF exposure guidelines.

The end product with an embedded AirCard 595 card must pass the unintentional emission testing and properly authorized per FCC Part 15 requirements.

Note: If this PC Card is intended for use in a portable device, you are responsible for separate approval to satisfy the SAR requirements of FCC Part 2.1093 and IC RSS-102.

Limited Warranty and Liability

THIS PRODUCT IS PROVIDED TO YOU UNDER THE FOLLOWING TERMS AND CONDITIONS THAT CONTAIN LIMITATIONS ON WARRANTIES AND LIABILITIES AND YOUR REMEDIES. BY USING THIS PRODUCT YOU AGREE TO THE TERMS AND CONDITIONS BELOW.

The original end-user purchaser of the enclosed wireless personal computer modem card (the "**Product**") from Sierra Wireless (the "**Vendor**") or one of its authorized suppliers, is offered a personal, non-transferable, limited warranty that: (a) the Product will be of good quality and free from defects in design, materials, workmanship, and manufacture under normal use and service; (b) all materials, parts, components, and other items incorporated in the Product will be new; and (c) the Product will be compliant with, and perform in accordance with, its specifications, for a period that expires one year from the original purchase date of the Product (the "**Warranty Period**").

During the Warranty Period, if Vendor determines that a Product is defective under a proper warranty claim, then Vendor will, at its sole discretion, either (a) pay parts and labor charges for the repair of the Product, or (b) replace the Product with a new or rebuilt unit (which unit may use refurbished parts of similar quality and functionality), provided that the defective Product is returned to a Vendor-authorized service center for the Product, transportation charges prepaid, and is accompanied by written proof of purchase in the form of a bill of sale or receipted invoice indicating that the Product was purchased by you and is within the Warranty Period. After the Warranty Period, you are responsible for paying all parts, labor, and shipping charges.

The warranty described above shall apply to all repaired or replaced Product for a period of 90 days from the date of return to you, or the balance of the Warranty Period, whichever is greater.

This limited warranty does not cover and is void with respect to: (a) Products which have been improperly installed, repaired, maintained, or modified; (b) Products which have been subjected to misuse (including using the Products with hardware which is electrically or mechanically incompatible with the Products), abuse, accident, physical damage, abnormal operation, improper handling or storage, neglect, exposure to fire, water, or excessive moisture or dampness, or extreme changes in climate or temperature; (c) Products which have been opened, repaired, modified, or altered by anyone other than Vendor or a Vendor-authorized service center; (d) Products which have been damaged due to fire, flood, acts of God, or other acts which are not Vendor's fault and which the Product is not specified to tolerate; (e) cosmetic damage; (f) Products which have been operated outside of published maximum ratings; (g) cost of installation, removal, or reinstallation of the Product; (h) signal reception problems (unless caused by a defect in material(s) or workmanship); or (i) Products on which warranty stickers or serial numbers have been removed, altered, or rendered illegible.

This limited warranty is not transferable to any third party including, but not limited to, any subsequent purchaser or owner of the Products. Any transfer or resale of any of the Products will automatically terminate Vendor's warranty coverage of such Products.

This limited warranty is only valid in the United States of America, and does not cover customer education, instruction, installation, setup adjustments, or signal reception problems.

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PN 2130683 Version 1.0 Oct2006